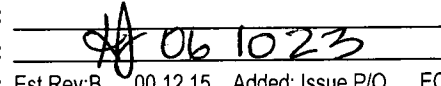


Date: Monday, 10/23/2006 12:05:37 PM  
 User: Kim Johnston

## Process Sheet

<b>Customer :</b>	CU-DAR001 Dart Helicopters Services	<b>Drawing Name :</b>	CROSSTUBE EXTRUSION (206L)
<b>Job Number :</b>	29114		
<b>Estimate Number :</b>	10027		
<b>P.O. Number :</b>	N/A	<b>Part Number :</b>	D6004115
<b>This Issue :</b>	10/23/2006	<b>S.O. No. :</b>	N/A
<b>Prsht Rev. :</b>	NC	<b>Drawing Number :</b>	D6004 REV A
<b>First Issue :</b>	N/A	<b>Project Number :</b>	N/A
<b>Previous Run :</b>	25664	<b>Drawing Revision :</b>	A
		<b>Material :</b>	N/A
<b>Written By :</b>		<b>Due Date :</b>	1/30/2007
<b>Checked &amp; Approved By :</b>			
<b>Comment :</b>	Est Rev:B 00.12.15 Added: Issue P/O EC		

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
----------------	------------------------------	----------------------

1.0

PG

PURCHASING

**Comment:** PURCHASING

Issue P/O

2339

a) Extrude as per Dwg D6004

b) Material: 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube.

c) Minimum ultimate tensile strength = 77 ksi

d) Minimum tensile yield strength = 66 ksi

e) Material certification required

ll

06-10-25

2.0

D6004115P

Crosstube material



**Comment:** Qty.: 1.0000 Each(s)/Unit Total: 18.0000 Each(s)  
 Crosstube material

3.0

PACKAGING 1

PACKAGING RESOURCE #1

**Comment:** PACKAGING RESOURCE #1

Receive &amp; Inspect For Transit Damage

Ensure material certification is attached

ll 7/3/23

(18)

4.0

QC6

DIMENSIONAL CHECK

**Comment:** DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6004

En 07/03/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA:      Date: 07/03/29  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 10/23/2006 12:05:37 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: CROSSTUBE EXTRUSION (206L)

Job Number: 29114

Part Number: D6004115

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

N/A

6.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

MAT - 27

02/03/26

7.0

QC21

FINAL INSPECTION/W/O RELEASE



18

Comment: FINAL INSPECTION/W/O RELEASE

07/03/27

Job Completion



U 07-03-27

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

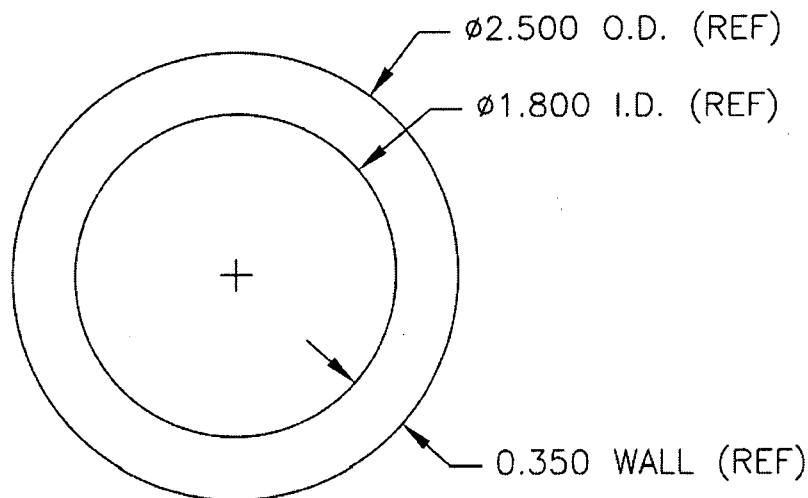
**NOTE:** Date & initial all entries



DESIGN CP	DRAWN BY CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D6004	REV. A SHEET 1 OF 1
DATE 00.11.22		TITLE CROSSTUBE MATERIAL	SCALE 1:1
A	00.11.22	NEW ISSUE	

## SPECIFICATION CONTROL DRAWING

RELEASED  
00.11.24 #



### NOTES

- 1) D6004-XXX CROSSTUBE  
LENGTH

WHERE XXX IS LENGTH IN INCHES  
EG. 115" LONG TUBE: D6004-115

- 2) MATERIAL: 2.500 OD x 0.350 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.  
MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi  
MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:  
O.D.:  $\pm 0.006$  MEAN ( $\pm 0.012$  INCLUDING OVALITY)  
WALL:  $\pm 0.015$  MEAN ( $\pm 0.035$  INCLUDING ECCENTRICITY)  
LENGTH: XXX  $+0.125/-0.000$   
STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 29114

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# order confirmation

## 21531

page: 3  
date: 11.02.2006  
customer: 40980

Tolerances per ASTM B210 / your drawing D6003  
Tubes protected with corrosion protective oil  
Tubes line marked  
Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit value	USD	delivery
004	18,000	PC	278,34	PC	5.010,12	March 16, 2007

AWU article: 19796 / Tariff no. 76082081  
Customer article: D6004-115 2.500 X 0.350 X 115  
product: TUBES / seamless extruded / EN AW-7075 / round  
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	2,500 INCH Tol.	+0,012	-0,012
tol. for mean OD		+0,006	-0,006
inner diameter:	1,800 INCH		
wall thickness:	0,350 INCH Tol.	+0,035	-0,035
fixed length	115,000 INCH Tol.	+0,125	

inspection cert. acc. to EN10204/3.1 / RM 531 / Rp0,2: 455  
straightness 0,01 INCH / 1 FEET / RMS outer 25  
tol. on quantity +15 % -15 %  
2.500" OD 0.350" Wall, 115" lengths  
Part Number D6004-115 crosstube  
Surface Finish max. RMS 25  
Tolerances per ASTM B210 / your drawing D6004  
Tubes protected with corrosion protective oil  
Tubes line marked  
Packing: seaworthy wooden cases

*PC 7/3/23*

item	quantity	unitprice	USD	unit value	USD	delivery
005	13,000	PC	375,95	PC	4.887,35	March 16, 2007

AWU article: 17954 / Tariff no. 76082081  
Customer article: D6005-128 2.750 X 0.375 X 128  
product: TUBES / seamless extruded / EN AW-7075 / round  
condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	2,750 INCH Tol.	+0,012	-0,012
tol. for mean OD		+0,006	-0,006
inner diameter:	2,000 INCH		
wall thickness:	0,375 INCH Tol.	+0,038	-0,038
fixed length	128,000 INCH Tol.	+0,125	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455  
straightness 0,01 INCH / 1 FEET / RMS outer 25  
tol. on quantity +15 % -15 %  
2.750" OD 0.375" Wall, 128" lengths  
Part Number D6005-128 crosstube

**ALUnna****Abnahmeprüfzeugnis 3.1 - EN 10204:2004****Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004****Kunde:**  
Client:

Dart Aerospace Ltd.

**Zeugnisnummer:** 136/07

Cert No.: / No. du certificat:

1270 Aberdeen Street  
K6A1K7 Hawkesbury, ON Canada**Bestellnummer:** PO 00002329

Order No. / No. de commande

**Produkt:**

Rohre nahtlos gepresst

**Auftrag:** 21531/4

Product / Produit:

Tubes seamless extruded

Our Reference/Notre Reference:

**Spezifikation:**

AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace D6004

Specification:

**Werkstoff:**

7075

**Zustand:** T 6511

Alloy/Alliage:

Temper/État

**Abmessung**

2,500 INCH x 1,800 INCH x 0,350 INCH x 115,000 INCH

Size / Dimension

D6004-115 2.500 X 0.350 X 115

**Kennzeichnung**ALUnna - Cert No. 136/07 - 7075 - T 6511 - Cast No. 80558 - AMS - QQA 200/11 - 2.500" OD X 0.350" Wall - Heat  
No. 4190 - Lot 21531/4-1 PO: 00002339

Marking/Marquage:

**Lieferung**

pcs.

lbs

**Country of Manufacture: Germany**

Delivered Material / Matériel délivré:

18

498

**1. Chemische Analyse****Chemical Analysis / analyse chimique**

Charge/ Cast No.	min.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
	max.	0,40	0,50	1,2	0,30	2,1	0,18	5,1						
80558		0,08	0,16	1,53	0,06	2,44	0,21	5,81	0,04	0,01	0,02	0,01	0,01	0,0001

**Hydrogen content:** 0,10

ccm/100 g Al

Elements without indication &lt; 0,01 %

**2. Mechanische Eigenschaften****Mechanical Properties / Valeurs Mécaniques**

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
min.	77,0	66,0				
max.						
1	87,580	81,055	9,0		168	4190 - 18 pcs.

RMS: outside 25 - max. 21 µ"

**Ergebnis der  
Prüfungen:**

Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results:

We confirm that the delivery has been tested and applies to the agreements made on receipt of the order

Results:

Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

## Packinglist ALUnna AG

Customer PO	PO. 00002339
ALUnna ref. no.	21531/4
Date:	02.15.07

### Boxmarking:

Dart Aerospace P.C. 00002339
D 6004-115 Made in Germany
Dest. Hawkesbury Ont., Canada

**We hereby declare that the wooden packing material are totally free from bark and apparently**

**free from live plant pests**

[illegible]